

No. J-11015/60/2008 -IA.II (M)  
Government of India  
Ministry of Environment, Forest & Climate Change  
IA-II (Coal Mining) Division

Indira Paryavaran Bhawan,  
Jorbagh Road,  
New Delhi-110003

Dated: 30<sup>th</sup> June, 2015

To,

**M/s Sasan Power Ltd.,  
Reliance Centre, B Wing, 2<sup>nd</sup> Floor,  
19<sup>th</sup>, Walchand Hirachand Marg,  
Ballard Estate. Mumbai 400001  
Maharashtra**

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**Sub. : Expansion under 7(ii) of EIA Notification, 2006 of Moher & Moher Amlori Extension coal blocks project (expansion from 12 MTPA (Normative) to 15 MTPA (Normative) and 16 MTPA (Peak) to 20 MTPA (Peak), in area of 2037 ha; Latitude 24<sup>o</sup> 07' 18" to 24<sup>o</sup> 09' 27" N and Longitude 82<sup>o</sup> 33' 15" to 82<sup>o</sup> 36' 15" E [15.39 Km<sup>2</sup> (Moher Block –10.70 Km<sup>2</sup> & Moher Amlori Extension Block –4.69 Km<sup>2</sup>)] of M/s Sasan Power Ltd., located at dist. Singrauli, Madhya Pradesh – Environmental Clearance - reg.**

Sir:

This is with reference to letter no. Nil dated 25.02.2014 with the application and subsequent letter no. dated 18.03.2014, 02.07.2014, 05.06.2014 and 11.11.2014 for Environmental Clearance for Expansion under 7(ii) of EIA Notification 2006 for the above-mentioned project.

2. The Ministry of Environment, Forest & Climate Change has considered the application. It is noted that the proposal is for grant of Environmental Clearance for **Expansion under 7(ii) of EIA Notification, 2006 of Moher & Moher Amlori Extension coal blocks project (expansion from 12 MTPA (Normative) to 15 MTPA (Normative) and 16 MTPA (Peak) to 20 MTPA (Peak), in area of 2037 ha; Latitude 24<sup>o</sup> 07' 18" to 24<sup>o</sup> 09' 27" N and Longitude 82<sup>o</sup> 33' 15" to 82<sup>o</sup> 36' 15" E [15.39 Km<sup>2</sup> (Moher Block –10.70 Km<sup>2</sup> & Moher Amlori Extension Block –4.69 Km<sup>2</sup>)] of M/s Sasan Power Ltd., located at dist. Singrauli, Madhya Pradesh.** The proposal was considered in the 15<sup>th</sup> EAC meeting held on 27<sup>th</sup> – 28<sup>th</sup> June, 2014 and 25<sup>th</sup> EAC meeting held on 13<sup>th</sup> – 14<sup>th</sup> November, 2014. The proponent has informed that:

- i. It is the Open Cast coal mine to which Ministry had granted EC vide letter no. J-11015/60/2008-IA.II (M) dated 10th December, 2008. Further, TOR granted for expansion of production capacity vide Letter No. J-11015/03/2013.IA.II (M) dated, 27th August 2013. However, Project proponent applied for expansion under 7(ii) of EIA Notification, 2006.
- ii. The latitude and longitude of the project 24<sup>o</sup> 07' 18" to 24<sup>o</sup> 09' 27" N and 82<sup>o</sup> 33' 15" to 82<sup>o</sup> 36' 15" E respectively.



iii. The land usage of the project will be as follows:

**Pre-Mining & Post Mining:**

<b>Pre-Mining Land use</b>	
Forest Land	1198 ha
Settlements	148 ha
Agricultural land	374 ha
Wasteland	317 ha
<b>Total</b>	<b>2037 ha</b>

**Post Mining Land Use**

Sl. No.	Description	Land Use (Ha)			Total
		Plantation	Water Body	Public Use	
1	Top Soil Dump	320			320
2	External Waste Dump				
3	Excavation (Backfill)	1411	29		1440
4	Road & Drain	15		25	40
5	Built-up Area			92	92
6	Green Belt	62			62
7	Undisturbed Area(Safety Zone)	83			83
	<b>Total</b>	<b>1,891</b>	<b>29</b>	<b>117</b>	<b>2,037</b>

Type	Area in ha.
Forest Land	1198.00
Govt. Land	160.64
Private Land	678.36
<b>Total</b>	<b>2037.00</b>

- iv. The total geological reserve is 575.0 MT. The mineable reserve 470.43 MT, extractable reserve is 470.43 MT. The per cent of extraction would be 81.80%.
- v. The coal grade is D, E & F. The stripping ratio is 4.03 m<sup>3</sup>/T. The average Gradient is 3 degree. There will be two seams with thickness ranging from 15.91m to 22.72m.
- vi. The total estimated water requirement is 4000 m<sup>3</sup>/day which of 605 m<sup>3</sup>/day water is Recycled & Net Water Requirement is 3395 m<sup>3</sup>/day. The initial water requirement being met from the bore wells. Later on 2770 m<sup>3</sup>/day of total water requirement will be met from the aquifer discharges of the mine excavation area. The level of ground water ranges from 2 m to 18 m. In the core zone, water level varies from 5.252 to 16.09 mbgl.
- vii. The Method of mining would be opencast using Shovels and Dumpers; Dragline for inter parting.
- viii. There is one external OB dump with Quantity of 204 Mm<sup>3</sup> in an area of 3.2 km<sup>2</sup> with height of 90 m max above the surface level and two internal dumps with Quantity of 1689.38 Mm<sup>3</sup> in an area of 1411 ha.

- ix. The final mine void would be in 29 Ha with depth of Less than 40 m and the Total quarry area is 1440 Ha. Backfilled quarry area of 1411 Ha shall be reclaimed with plantation. A void of 29 ha at a depth of 290 m (max.) which is proposed to be converted into a water body
- x. The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.
- xi. The **life of mine** is 29 Years for peak capacity of 20 MTPA and 35 years for normative capacity of 15 MTPA.
- xii. **Transportation:** Coal transportation from face by dump trucks up to Receiving Pits and from there to Transfer Point through Belt Conveyors and from there on by OLC to Power Plant.
- xiii. **R & R** is involved. There are 988 PAFs.
- xiv. **Cost:** Total capital cost of the project is Rs. 432,700 lakhs. CSR Cost Rs. 250 lakhs per year. R&R Cost Rs. 11,238 lakhs. Environmental Management Cost is Rs. 3796.7 lakhs.
- xv. **Water body:** One nala is originating from eastern part of the plateau & flows towards west. Two small streams are originating from the central portion of the block & are flowing towards south-east. These streams discharge into Kachannala which flows in NW-SE direction & ultimately drains into Govind Ballabh Panth Sagar Reservoir (Rihand Reservoir) built over Rihand River which is a tributary of Son River. Chingitola Nala- Flowing S-W, meets to Kachan River; Forest Nala- flowing Southward, meets to Kachan River; Hawwraha Nala- flowing Southward, meets to Kachan River; Kachan River meets to Govind Ballabh Pant Sagar
- xvi. **Flora and Fauna:** No prominent grassland ecosystem has been found in the Core and Buffer zone areas.
- xvii. **Approvals:** Ground water approval obtained on 27.07.2011, Board's on 11.02.2011. Mining plan has been approved on 02.03.2009 for an ML area of 1539 ha. Mine Closure Plan approval on 06.09.2011.
- xviii. **Wildlife issues:** Wildlife Management Plan (WLMP) has been prepared and enclosed along with the environmental impact assessment report. WLMP has also been submitted to the state Govt. for preparation of a Regional wildlife management plan by MP State Wild Life board, Bhopal. 7 species of mammals are found within the Mining Lease Area & 13 animals species observed from Buffer Zone.
- xix. **Forestry issues:** Total forest area involved (in ha) for mining 1197.01 ha. Forest Clearance (FC) has been obtained vide letters no. F. No. 8-92/2008-FC dt. 25.05.2010 (991.81 Ha forest land and 72.21 Revenue Forest land) and F. No. 8-91/2008-FC dt. 28.05.2010 (110.89 Ha forest land and 31.30 Ha Revenue forest) respectively.)
- xx. The forest is characterized by Tropical Mixed Deciduous Forest. The terrestrial floral species consist of Tropical deciduous tree species, shrubs and dry deciduous grasses. The main tree species out of 42 large trees, 12 small trees, 20 shrubs, 14 vines in the area.
- xxi. There are no National Parks, Biosphere Reserves found in the 10 km Buffer Zone.
- xxii. Total **afforestation** plan shall be implemented covering an area of 1891 ha at the end of mining. Green Belt over an area of 62 ha. Density of tree plantation 1600 trees/ ha of plants.
- xxiii. There are no **court cases/violation** pending with the project proponent.
- xxiv. **EC Compliance report:** The Compliance Monitoring Report for Moher and Moher-Amlohri Extension coal mine has been submitted by the MoEF, Regional Office, Bhopal vide letter no. 3-11/2009(ENV)/084 dated 20th June 2014. The Committee has noted that several conditions of earlier EC no. J-J-11015/60/2008-IA-II(M) dated 10<sup>th</sup> December, 2008 have been partially complied. The proponent had submitted an action plan so as to comply with these partly complied conditions and are under progress. These include the following:

- i. Main drain has been de-silted by 15<sup>th</sup> May 2014. The 8.44 KM of Garland drains around the working area and OB dump have been completed by 10<sup>th</sup> June 2014.



- ii. Top soil removal, storage & use are successive and periodic activities. Existing topsoil shall be used for green belt, dump slope and other available place for stabilization in monsoon of FY 2014-15
- iii. Reclamation & vegetation over OB dump shall start after 6th year i.e. 2017-18 & report shall be submitted to the concerned authorities on an yearly basis. Vegetation of around 600 meter of available final dump slope will be done in the monsoon of 2014-15. The work order for slope stability study has been awarded to CIMFR, Dhanbad and the report is expected by November, 2014.
- iv. Existing drains have been de-silted & Garland drains around the working area and OB dump have been completed by 10th June 2014.
- v. The western (permanent) side of dump slope is provided with a 600m long retaining wall for checking run-off and siltation from OB dumps/benches. Other sides of dump are progressive in nature and retaining wall will be completed as per the OB dump progression.
- vi. Steel cladding and steel roofing of whole structure at transfer points have been completed by 28<sup>th</sup> May 2014 to arrest wind-blown fine coal dust near transfer points. Dust extraction system has already been completed. Dust Suppression System fitted earlier shall be rectified by mist cannon by August 2014.
- vii. The mode of coal transportation changed from MGR to covered overland conveyor (OLC). Request to amend the said condition in EC of coal mines as per the amended condition in the EC of the power plant
- viii. Ground water level, quality and quantity is being monitored as per the stipulated condition and the report has been submitted to the CGWA.
- ix. Ground water recharge structures have been constructed in and around the mine area and soil conservation measures have been taken. Additional artificial ground water recharge structures and surface water ponds have been identified for Amlohri and Naugarh villages. These shall be constructed to recharge ground water, water channels and augment surface water by FY 2015-16. Soil conservation areas are being identified to take up soil conservation measures.
- x. Standards of treated effluent are well within the prescribed limits for discharge. Copies of analytical reports have been submitted to Madhya Pradesh Pollution Control Board (MPPCB). The same shall be submitted to the Regional Office, Bhopal along with water balance. The outlet sample from ETP had also been tested by MPPCB and the result was found well within standard.
- xi. The report covering first 3 years i.e., 2011-2014 shall be submitted to MOEF and its regional office at Bhopal by December 2014.
- xii. The R & R of remaining PAFs (308 nos) of Moher Village is planned to be completed as per requirement, in phases.

3. The proponent has further informed that:

- i Action plan based on the Compliance Monitoring Report obtained from Regional Office, MoEF, Bhopal submitted to MoEF, Delhi on 2<sup>nd</sup> July 2014. A copy of the above has also been submitted to Regional Office, MoEF, Bhopal at the same time. SPL further submitted an updated status of the Action Plan on 9<sup>th</sup> September 2014 to Regional Office, MoEF, Bhopal with a copy to MoEF, Delhi. Concurrence on the Action Plan from Regional Office, MoEF, Bhopal has been submitted to MoEF, Delhi on 1<sup>st</sup> October 2014
- ii At 100% PLF, Sasan UMPP will require around 18 – 19 MTPA of coal, depending on the quality of coal and heat rate of Sasan UMPP. Ministry of Coal (MoC) vide Gazette Notification dated 17th February 2010 has specified that surplus quantity of coal up to a maximum quantity



of 9 MTPA from the coal mines of Moher, Moher-Amlohri Extension and Chhatrasal shall be used in the thermal power plant of M/s Chitrangi Power Private Limited for generation of power. A copy of MoC's Gazette notification dated 17th February 2010 has already been submitted to MoEF, Delhi on 2nd July 2014 along with a note on utilization of coal from captive coal blocks allocated to Sasan UMPP.

- iii A point-wise compliance status in response to the show cause notice issued by Madhya Pradesh Pollution Control Board (MPPCB) has been submitted vide letter dated 9th January 2013. A copy of the show cause notice issued by SPCB (MPPCB) and Sasan Power Ltd's response to the show cause notice has already been submitted to MoEF, Delhi on 2<sup>nd</sup> July 2014 . There has not been any legal action from MPPCB in this regard.
- iv Transportation of coal from coal mine to Chitrangi Power Plant has been proposed to be carried out by means of an overland conveyor (OLC). The route survey for transportation of coal has been completed and detailed study is under progress.
- v This will be applicable based on consideration of the present proposal under MoEF's Office Memorandum dated 19th December 2012.
- vi The revised mine closure plan has been submitted to MoEF, New Delhi on 19th April 2014. A copy of the revised mine closure plan was again submitted on 4<sup>th</sup> August 2014. The approval letter for the mine closure plan by Ministry of Coal (MoC) dated 6th September 2011 has been submitted to MoEF, New Delhi on 2nd July 2014. A note on utilization of coal from captive coal blocks allocated to Sasan UMPP has also been submitted to MoEF, New Delhi on 2nd July 2014. Escrow Agreement has been signed and a sum of Rs. 958.41 Lakhs has been deposited as Mining Closure Expenditure for the period 2011-12 to 2013-14.
- vii The mode of coal transportation from Moher and Moher-Amlohri Extension coal mine to Sasan UMPP was amended from MGR to covered overland conveyor (OLC) vide MoEF letter no. J-13011/15/2006-IA.II (T) dated 5th February, 2013 by Thermal Coal Committee. The Ministry, vide the above mentioned letter, informed that it has 'No Objection' on adoption of mechanized Closed Conveyor System in lieu of MGR system of coal transportation based on environmental benefits established. A copy of MoEF's letter no. J-13011/15/2006-IA.II (T) dated 5th February, 2013 for amendment of transportation condition from MGR to OLC has been submitted to MoEF, New Delhi on 2nd July 2014. Request letter has been sent to EAC (coal mining) to consider and accord approval for change of mode of coal transportation from MGR to OLC on 11th November 2014
- viii The documents in relation to expansion of capacity of Moher and Moher-Amlohri Extension coal mine have already been submitted to MoEF, Delhi on 2nd July 2014 which includes Analysis of Ambient Air Quality with enhanced peak production capacity from 16 MTPA to 20 MTPA. Environment & Social Management Plan (ESMP) with enhanced peak production capacity from 16 MTPA to 20 MTPA.
- ix Detailed OB handling programme has been described under Chapter-II of the Environment Impact Assessment (EIA) report submitted to MoEF, Delhi on 24th February 2014. Stage wise reclamation plan and land use planning for grassing & plantation are given under Chapter 9 & 10 of the submitted EIA report.
- x Before onset of monsoon every year, surface drainage design of the mine area is planned and implemented as per the monsoon preparation plan and mine drainage plan prepared on the basis of peak rainfall data and surface runoffs. A brief status of the activities undertaken: i. Main drain of size 8m at top x 6m at bottom x 2 to 3.5 m has been de-silted by 15th May 2014. ii. 8.44 km of Garland drains around the working area and OB dump have been completed by 10th June 2014. c) The details with respect to the Project drainage system has been submitted to MoEF, New Delhi on 2nd July 2014. Along with photographs of garland drains constructed.



xi Details of project land use is given below:

S.No.	Particulars	Area (Ha)
A	Total Project Area	2,037
1	Break-up of Project Area	
	- Mine lease Area	1,539
	- Land for external OB dump & infra facilities	498
	Total	2,037
2	Type of Land	
	- Forest Land (Forest Clearance (FC) has been obtained vide letters no. F. No. 8-92/2008-FC dt. 25.05.2010 and F. No. 8-91/2008-FC dt. 28.05.2010 respectively.)	1,198
	- Tenancy Land	839
	Total	2,037

- xii A copy of the affidavit has been submitted stating that no investigation or their matters are under consideration of the IMG.
- xiii SPL in consultation with the senior district officials, expert organizations like Energy and Resources Institute (TERI) and local population has formulated a comprehensive and development oriented rehabilitation package for the displaced families/persons. R & R plan of the Company provide benefits to project affected persons as per Government of Madhya Pradesh's (GoMP) Model Rehabilitation & Resettlement Policy 2002 and the National R&R Policy 2007 but it also offers several benefits which are distinctly superior to those under the State and Central policies.
- xiv To minimize the impact, the PP is undertaking several initiatives to ameliorate the socio-economic impact. Some of these initiative include construction of a housing colony for the affected families, provision of free transport facilities, disbursement of monetary incentives such as rehabilitation grant and pension, formation of local institutions or strengthening the existing ones, capacity building for better livelihood opportunities, providing free education and health care facilities by qualified persons and experts, etc.
- xv The Project Company has also undertaken several sustainable livelihood initiatives keeping in view the indigenous knowledge, capabilities and traditional values of the local communities.
- xvi SPL has constructed a model R&R colony "Krishna Vihar" in Amlohri & Naugarh village for resettlement of coal mine affected families.
- xvii The PP has informed that they have made adequate measures for providing better roads, Water and sanitation; School; Community/Panchayat Hall; Cooperative store / Daily market; Religious Places; Health Centre; Other infrastructure in the R&R Colony etc.
- xviii Moher and Moher-Amlohri Extension opencast coal mine of Sasan UMPP is being operated using a combination of Draglines (2 nos.) of 61 m<sup>3</sup> bucket capacity & 100 m boom length and Shovel – Dumper system consisting of 42 m<sup>3</sup> bucket capacity shovels (6 nos.) and 240 Ton Dump Trucks (55 nos.). This mining technology was found to be most suitable for mining operations considering the present geo-mining conditions. The (higher) UPPER benches in the

mine are planned to be worked upon by Shovel – Dumper system and Draglines are planned to be deployed for mining of parting between Turra and Purewa Seams.

- xix The total volume of OB to be handled is about 1,893.73 Mm<sup>3</sup>, out of which 1,689.38 Mm<sup>3</sup> (about 89.21%) will be dumped internally within the coal block area and balance about 204.35 Mm<sup>3</sup> (around 10.79%) will be dumped in the external dump located on the southern side of South Pit in the non-coal bearing area.
- xx Overburden (OB) dump formation at Moher and Moher-Amlohri extension coal mine is in accordance with the recommendation of Slope Study Analysis.
- xxi To ensure the stability of OB dump environmental control measures have been integrated into the mining operation to mitigate the effects of mining operations and allied activities and to maintain sound ecological balance. As per the year wise excavation plan, the mine benches will remain active till the end of
- xxii Trees shall be planted on the Overburden dump as per Environment Management Plan (EMP) approved by Ministry of Environment and Forests (MoEF) in a phased manner. A green belt shall be made along all the service buildings and Coal Handling Plant. The species to be planted in the area are Mango, Mahul, Sal etc. Local species as available will also be planted. In addition to compensatory afforestation, a green belt will also be developed in vacant areas, around office buildings, garages, stores etc. along the road sides and on the external dump. Only local species will be planted under the guidance of the state forest department.
- xxiii Bio-reclamation of the overburden dumps refers to creation of vegetation cover over the barren overburden dumps.
- xxiv An amendment has been done in Thermal EAC meeting w.r.t transportation of coal by *Over Land Conveyer*.

4. The proposal was considered in the Expert Appraisal Committee (EAC) (Thermal & Coal Mining) and recommended in its 25<sup>th</sup> EAC meeting held on 13<sup>th</sup> – 14<sup>th</sup> November, 2014 for granting Environmental Clearance. The Ministry of Environment, Forests & Climate Change hereby accords environmental clearance for the above-mentioned **Expansion under 7(ii) of EIA Notification, 2006 of Moher & Moher Amlori Extension coal blocks project (expansion from 12 MTPA (Normative) to 15 MTPA (Normative) and 16 MTPA (Peak) to 20 MTPA (Peak), in area of 2037 ha; Latitude 24<sup>o</sup> 07' 18" to 24<sup>o</sup> 09' 27" N and Longitude 82<sup>o</sup> 33' 15" to 82<sup>o</sup> 36' 15" E [15.39 Km<sup>2</sup> (Moher Block – 10.70 Km<sup>2</sup> & Moher Amlohri Extension Block –4.69 Km<sup>2</sup>)] of M/s Sasan Power Ltd., located at dist. Singrauli, Madhya Pradesh** under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto subject to the compliance of the terms and conditions mentioned below.

**A. Specific Conditions:**

- i. The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.
- ii. **As per Supreme Court Judgement dated 25.08.2014 in case no. 120/2012, the coal blocks allocated for UMPP would only be used for UMPP and no diversion of coal for commercial exploitation shall be permitted. Accordingly, notwithstanding anything else contained in this or any other approval of this Ministry, the production of coal from UMPP block shall be limited to the extent to meet the requirement of Sasan UMPP only.**
- iii. The validity of the EC is for the life of the Mine or as specified in the EIA Notification, 2006, whichever is earlier.
- iv. The Wildlife Conservation Plan shall be prepared for the project and approved by the Govt. of Madhya Pradesh. This shall be implemented in consultation with the Forest and Wildlife Departments of the State Government. The Plan shall include creation of a corridor in conjunction with the neighbouring mines which come up in the area to allow movement of these fauna through the project



area. The corridor shall be forested with species from the natural habitat for free movement of fauna found in the study area to provide connectivity to enable them reach the neighbouring forests unhindered. The project authorities shall also participate in the Regional Conservation Plan as and when prepared in the future for the conservation of flora-fauna found in the region.

- v. The environmental clearance is subject to obtaining prior clearance from wildlife angle including clearance from the Standing Committee of the National Board for Wildlife as applicable.
- vi. There shall be no diversion of coal to any other end user other than for which it has been intended thermal power plant(s).
- vii. There shall be no increase in Mine Lease Area.
- viii. Transportation of Coal shall be through Over Land Conveyor.
- ix. During expansion there shall be no additional external Dumps.
- x. Garland drain shall be provided.
- xi. OB slope stability needs to be expedited.
- xii. Grassing to be done on top soil to protect its fertility.
- xiii. Additional toilets in the school be provided under CSR program..
- xiv. Gabion wall / retaining wall/pitching of boundary wall be provided.
- xv. The medical facilities be improvised.
- xvi. Coal transportation in pit by Tippers, Surface to Siding by Tipper and loading at siding by pay loaders into rail wagons
- xvii. The production shall be within the same Mining Lease area.
- xviii. The production shall be within the same Mining Lease area.
- xix. The OB shall be completely re-handled at the end of the mining and the area shall be back filled upto the ground level and covered with about a meter thick top soil.
- xx. The land after mining shall be brought back for agriculture purpose to the extent possible.
- xxi. Garland drains be provided.
- xxii. Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the mine.
- xxiii. The CSR cost should be Rs 5 per Tonnes of Coal produced which should be adjusted as per the annual inflation.
- xxiv. Everybody in the core area should be provided with mask for protection against fugitive dust emissions.
- xxv. Dust mask to be provided to everyone working in the mining area.
- xxvi. The supervisory staff should be held personally responsible for ensuring compulsory regarding wearing of dust mask in the core area.
- xxvii. People working in the core area should be periodically tested for the lung diseases and the burden of cost on account of working in the coal mine area.
- xxviii. The mining area should be surrounded by green belt having thick closed thick canopy of the tree cover.
- xxix. The embankment constructed along the river boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side and stabilised with plantation so as to withstand the peak water flow and prevent mine inundation.
- xxx. There shall be no overflow of OB into the river and into the agricultural fields and massive plantation of native species shall be taken up in the area between the river and the project.
- xxxi. OB shall be stacked at one external OB dumpsite(s) only. The ultimate slope of the dump shall not exceed 28°. Monitoring and management of existing reclaimed dumpsites shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forests & Climate Change and its concerned Regional office on yearly basis.
- xxxii. Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilised for watering the mine area, roads, green belt development, etc. The drains shall be regularly desilted and maintained properly. Garland drains (size, gradient and length) and sump capacity shall be designed keeping 50%



safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.

- xxxiii. Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.
- xxxiv. Crushers at the CHP of adequate capacity for the expansion project shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc.
- xxxv. Drills shall be wet operated.
- xxxvi. The project authorities shall undertake regular repairing and tarring of roads used for mineral transportation. A 3-tier green belt comprising of a mix of native species shall be developed all along the major approach roads,
- xxxvii. Controlled blasting shall be practiced with use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.
- xxxviii. A Progressive afforestation plan shall be implemented covering an area of 1891ha at the end of mining, which includes reclaimed External OB dump area (320ha), Internal OB dump area (1411ha), along roads and Green belt (62ha) and in township located outside the lease by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha. Massive plantation shall be carried out in open spaces in and around the mine and a 3-tier avenue plantation along the main approach roads to the mine.
- xxxix. An estimated total 1893.38 Mm<sup>3</sup> of OB will be generated during the entire life of the mine. Out of which 204 Mm<sup>3</sup> of OB will be dumped in one external OB Dumps an earmarked area covering 3.2 km<sup>2</sup> of land with height of 90 m. 1689.38 Mm<sup>3</sup> of OB will be dumped in two internal OB dump in covering an area of 1411 ha. The maximum height of external OB dump for hard OB will not exceed 90 m. The maximum slope of the dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump sites shall continue till the vegetation becomes self- sustaining and compliance status shall be submitted to MOEF and its Regional Office on yearly basis.
- xl. The proponent should prepare restoration and reclamation plan for the degraded area. The land be used in a productive and sustainable manner.
- xli. Compensatory Ecological & Restoration of waste land, other degraded land and OB dumps in lieu of breaking open the land be carried out.
- xlii. The mining should be phased out in sustainable manner. No extra over burden dumps are permitted.
- xliii. No groundwater shall be used for mining operations.
- xliv. Of the total quarry area of 1440 ha. the backfilled quarry area of 1411 ha shall be reclaimed with plantation and a void of 29 ha at a depth of 40 m which is proposed to be converted into a water body shall be gently sloped and the upper benches shall be terraced and stabilised with plantation/afforestation by planting native plant species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.
- xlvi. Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected shall be submitted to the Ministry of Environment, Forests & climate change and the Central Pollution Control Board quarterly within one month of monitoring.
- xlvi. The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource in case monitoring indicates a decline in water table. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
- xlvii. Sewage treatment plant shall be installed in the existing colony. ETP shall also be provided for workshop and CHP wastewater.



- xlvi. Besides carrying out regular periodic health check-up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, through an specialised agency /institution within the District/State and the results reported to this Ministry and to DGMS.
- xlix. Land oustees shall be compensated as per the norms laid out R&R Policy of CIL or the National R&R Policy or R&R Policy of the State Government whichever is higher.
- i. For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF&CC and its concerned Regional office
  - ii. A detailed Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forests & Climate Change within 6 months of grant of Environmental Clearance.
  - iii. The project authorities shall in consultation with the Panchayats of the local villages and administration identify socio-economic and welfare measures under CSR to be carried out over the balance life of the mine.
  - iiii. Corporate Environment Responsibility:
    - a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.
    - b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
    - c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.
    - d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

#### **B. General Conditions:**


- i. No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment, Forests & Climate Change.
- ii. No change in the calendar plan of production for quantum of mineral coal shall be made.
- iii. Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.
- iv. Data on ambient air quality (PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub>) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its concerned Regional Office and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognised under the EPA rules, 1986 shall be furnished as part of compliance report.
- v. Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.
- vi. Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May 1993 and 31<sup>st</sup>

December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.

- vii. Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.
- viii. Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EPA Rules, 1986.
- ix. Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.
- x. Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.
- xi. A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.
- xii. The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its concerned Regional Office.
- xiii. The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the Ministry of Environment, Forests & Climate Change at <http://envfor.nic.in>.
- xiv. A copy of the environmental clearance letter shall be marked to concern Panchayat/Zila Parishad, Municipal Corporation or Urban local body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.
- xv. A copy of the environmental clearance letter shall be shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.
- xvi. The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.
- xvii. The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the Ministry, respective Zonal Office s of CPCB and the SPCB.
- xviii. The Regional Office of this Ministry located in the Region shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.
- xix. The Environmental statement for each financial year ending 31 March in For -V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF&CC by e-mail.




5. The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report so also during their presentation to the EAC.
6. The commitment made by the Proponent to the issue raised during Public Hearing shall be implemented by the Proponent
7. The proponent is required to obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection.
8. The Ministry or any other competent authority may stipulate any further condition for environmental protection.
9. The Proponent shall setup an Environment Audit cell with responsibility and accountability to ensure implementation of all the EC Conditions.
10. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
11. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India/High Courts and any other Court of Law relating to the subject matter. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.
12. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
13. This EC supersedes the earlier EC, vide letter no. J-11015/60/2008-IA.II (M) dated 10<sup>th</sup> December, 2008 for 12 MTPA (Normative) and 16 MTPA (Peak) 16.00 MTPA in an area of 2037 ha.

  
(Dr. R. Warriar)  
Director

**Copy to:**

1. Secretary, Ministry of Coal, New Delhi.
2. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, E-2/240 Arera Colony, Bhopal – 462016.
3. Secretary, Department of Environment & Forests, Government of Madhya Pradesh, Secretariat, Bhopal.
4. Member Secretary, Madhya Pradesh State Pollution Control Board, Paryavaran Parisar, E-5, Arera Colony, Bhopal – 462016.
5. Member Secretary, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.

6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. District Collector, Singrauli, Government of Madhya Pradesh.
8. Monitoring File    9.    Guard File    10.    Record File    11. Notice Board.

  
(Dr. R. Warriar)  
Director

